Name_____
Date_____ Block_____

II. Factoring Quadratic Trinomials with a=1

ax^2+bx+c

x^2+bx+c

- with x^2
- no variable
- +

Shortcut: Find 2 numbers whose product is $a \cdot c$ and whose sum is b.

Example 1: Factor $x^2+11x+30$ $a=1$ $b=11$ $c=30$

*a·c	+b
1, 30	30, 1
2, 15	17 ✗
3, 10	13 ✗
6, 5	11

$(x+6)(x+5)$

Check $(x+6)(x+5)$

$x^2+5x+6x+30$

$x^2+11x+30$

Example 2: Factor $x^2-9x-10$ $a=1$ $b=-9$ $c=-10$

*	+9
-10	
-2, 5	3 ✗
2, -5	-3 ✗
-1, 10	9 ✗
1, -10	-9

$(x+1)(x-10)$

Example 3: Factor $2x^2-8x-24$ GCF = 2

$2(x^2-4x-12)$ $a=1$ $b=-4$ $c=-12$

*	+4
12	
-6, 2	-4

$2(x-6)(x+2)$

Example 4: Factor x^2-25 (This is really $x^2+0x-25$).

This is a special case called a **Difference of Squares**: $a^2-b^2=(a-b)(a+b)$

Example 5: Simplify $\dfrac{x^2+5x+6}{x^2+2x-3}$